5
30T X 22M
15T X 22M

GENERAL NOTES

1. ARABIC NUMERALS WITH THE LETTERS "PROJ" ABOVE REPRESENT NAVIGATIONAL DRAFT MARKS. REMAINING ARABIC NUMERALS REPRESENT CALCULATIVE DRAFT MARKS.

2. DIMENSIONS:
   (A) LONGITUDINAL LOCATIONS OF ALL ITEMS ARE GIVEN FROM THE STERN REFERENCE POINT (AFT END OF MAIN DECK AT CENTERLINE).
   (B) HEIGHTS OF ALL ITEMS ARE GIVEN FROM THE BOTTOM OF THE KEEL AMIDSHIPS EXTENDED.
   (C) LONGITUDINAL LOCATIONS AND HEIGHTS OF SIDE BLOCKS ARE TAKEN TO THE AFT SIDE OF BLOCKS.
   (D) REFERENCE DIMENSIONS FOR DOCKING PLUGS ARE TAKEN FROM THEIR CENTER.

3. COMPLETE PAINTING OF HULL:
   1 (A) IN ORDER TO CLEAN AND PAINT THE ENTIRE BOTTOM OF THE VESSEL IN THREE SUCCESSIVE DOCKINGS. THE FOLLOWING POSITIONS OF THE VESSEL ARE NECESSARY:
      (1) POSITION NO. 1
      ~~AFTER END OF MAIN DECK (POINT OF REFERENCE) IS PLACED 12162mm AFT OF AFTER SIDE OF NO.1 SIDE BLOCK.~~
      (2) POSITION NO. 2
      ~~AFTER END OF MAIN DECK (POINT OF REFERENCE) IS PLACED 13381mm AFT OF AFTER SIDE OF NO.1 SIDE BLOCK.~~
      (3) POSITION NO. 3
      ~~AFTER END OF MAIN DECK (POINT OF REFERENCE) IS PLACED 10942mm AFT OF AFTER SIDE OF NO.1 SIDE BLOCK.~~
   (B) REPEAT CYCLE OF POSITIONS. ASCERTAIN FROM VESSEL THE POSITION OF VESSEL AT ITS LAST DOCKING.

4. DIMENSIONS IN THE TABLE OF OFFSETS ARE GIVEN IN MILLIMETERS.

5. KEEL BLOCKS SHALL BE CONFIGURED TO CLEAR DRAIN PLUGS.

6. BLOCKING:
   (A) BLOCKING SHOWN ON THIS PLAN IS THAT REQUIRED FOR BLOCKING UNDER ORDINARY UNDAMAGED CONDITIONS.
   (B) KEEL BLOCKS:
      (1) KEEL BLOCKS SHALL BE ARRANGED IN PIERS CONSISTING OF 914mmx914mmx305mm HARDWOOD TIMBERS MOUNTED WITH 50 MM MIN THICKNESS SOFTWOOD CAP BLOCKS, UNO. LONGITUDNAL SPACING AND ALL OTHER NEEDED INFO IS LISTED IN KEEL BLOCK TABLE OF OFFSETS.
      (2) NO BLOCKS OR SHORES ARE REQUIRED UNDER ORDINARY CONDITIONS OF DOCKING UNDER THE STERN AFT OF FRAME 83.
   (C) SIDE BLOCKS:
      (1) SIDE BLOCKS SHALL BE LOCATED (P) AND (S) UNDER MAJOR TRANSVERSE OR LONGITUDINAL STRUCTURE AT DISTANCES OFF CENTERLINE AS INDICATED ON TABLE OF OFFSETS.
      (2) SOFTWOOD CAPS ARE REQUIRED, 50 MM MIN THICKNESS.
      (3) SIDE BLOCKS ARE NUMBERED FROM AFT TO FORWARD WITH THE MOST AFT BLOCK AS NO. 1.

7. ALLOWABLE BLOCK PRESSURE IS 500 PSI (35.15 KG/CM^2).

8. VESSEL DISPLACEMENT USED FOR BLOCK BEARING PRESSURES IS APPROXIMATELY 2440.97 MT IN DEPARTURE CONDITIONS.

9. THE CENTERBOARD MUST BE RETRACTED DURING DOCKING EVOLUTIONS.

10. VESSEL MUST BE DOCKED WITHOUT LIST AND EXCESSIVE TRIM. MAXIMUM ALLOWABLE TRIM IS 580 MM.

11. BLOCKS IN EXCESS OF 1829 MM IN HEIGHT SHALL BE STRAPPED TOGETHER USING ANGLES, AND SIDE BLOCKS SHALL BE TIED TOGETHER LONGITUDINALLY WITH STEEL RODS.

12. A HARD CAP IN CONJUNCTION WITH A SOFT WOOD STRATUM BELOW MUST BE USED FOR KEEL BLOCKS 1–4, 16 & 17.

13. DRYDOCK BEARING PRESSURES DERIVED FROM REFERENCE 12 & 13.

14. SIDE BLOCKS IN EXCESS OF 1829 MM IN HEIGHT SHALL HAVE A BASE 3X WIDER AT THE BOTTOM THAN AT THE TOP.

1 15. ADD OUTBOARD BLOCK #1 P/S AFTER VESSEL IS LANDED IF KEEL BLOCK #1 IS NEEDED TO BE REMOVED FOR DRAIN PLUG ACCESS OR PAINTING
3 16. KEEL BLOCK #1 TO BE REMOVED AFTER VESSEL IS LANDED FOR PAINTING OR WHEN ACCESS TO DRAIN PLUGS IS NECESSARY.

CRITICAL DIMENSIONS

LENGTH OVERALL	=	63.57 m
LENGTH BETWEEN PERPENDICULARS	=	58.00 m
LENGTH ON DWL	=	61.00 m
BEAM, EXTREME	=	15.00 m
BEAM, ON DWL AT STA OF MAX AREA	=	15.00 m
BEAM, ON DWL AT MIDSHIPS	=	15.00 m
DRAFT, TO DWL, AMIDSHIPS	=	5.35 m
DRAFT, MLD BASELINE TO DWL	=	5.90 m
SLOPE OF KEEL DRAG	=	1: 37.12

BASELINE LOCATED .55 m BELOW MLD KEEL AT MIDSHIPS
COMPLEMENT 39 (TOTAL)

DISPLACEMENT PROPERTIES

VESSEL CONDITION	DISPLACEMENT	FWD DRAFT (M) @ FP	MEAN DRAFT (M) @ MIDSHIPS	AFT DRAFT (M) @ AP	VCG (M, ABL)	LCG (AFT OF FP)
LIGHTSHIP (WEIGHT REPORT, REV 10)	1786.69	5.000	5.000	5.000	7.360	32.495
VESSEL IN BURNT OUT CONDTION	2279.70	5.361	5.679	5.997	7.282	29.976
VESSEL IN DEPARTURE CONDTION	2440.97	6.136	5.988	5.839	7.194	29.272

REVISIONS

REV	ZONE	DESCRIPTION	DATE	APPROVED
1	8–D 40–B 36–D	1. SH 1, GENERAL NOTES: REVISED G.N. 3 TO DELETE INCORRECT REFERENCE LOCATIONS. CORRECT LOCATIONS PROVIDED ON SHT 5. 2. SH 5, SIDE BLOCK POSITION NO. 2 TABLE: CORRECTED REFERENCE LOCATIONS FOR #1 OB AND #6 OB FROM 13210 AND 37610 TO 12610 AND 37810, RESPECTIVELY. 3. SH 5, SIDE BLOCK POSITION NO. 3 TABLE: CORRECTED REFERENCE LOCATION FOR #1 OB FROM 11991 TO 11400. ITEMS 1 – 3 PER ENGINEERING DEVELOPMENT	11/3/03 AGE	11/3/03 RG
2		1. SH 2, ELEV. 13–A: ADDED TRANSDUCER APPENDAGE AFT OF KEEL BLOCK #15. CORRECTED ELEVATION CALLOUT FROM "13–C" TO "13–A". 2. SH 2, PLAN 13–C: CORRECTED LOCATION AND SHAPE OF TRANSDUCER APPENDAGE. SPLIT KEEL BLOCK #15 TO PORT AND STARBOARD LOCATIONS, 580 OCL, TO CLEAR TRANSDUCER APPENDAGE. CORRECTED PLAN CALLOUT FROM "13–A" TO 13–C". 3. SH 3, PLAN 20–A: CORRECTED LOCATION AND SHAPE OF TRANSDUCER APPENDAGE. MOVED KEEL BLOCK #15 TO POSITION #2 LOCATION TO CLEAR TRANSDUCER APPENDAGE. 4. SH 3, PLAN 20–C: CORRECTED LOCATION AND SHAPE OF TRANSDUCER APPENDAGE. 5. SH 6, TABLE FOR KEEL BLOCK NO. 1–17: REVISED BLOCK BEARING PRESSURES FOR BLOCK #15, POSITION 1, FROM 1.755 TO 0.878. REVISED LONGITUDINAL LOCATION AND HEIGHTS FOR BLOCK #15, POSITION 3 TO SUIT RELOCATION TO CLEAR TRANSDUCER. ITEMS 1 – 5 PER ENGINEERING DEVELOPMENT	5/26/04 AGE	5/27/04 RG
3		1. SH 1, GENERAL NOTES: ADDED GENERAL NOTES 15 AND 16. 2. SH 2, ELEVATION 13–A: REVISED LOCATION OF SONAR TRANSDUCER FROM FRAME 25 TO FRAME 23. DELETED KEEL BLOCK #15. 3. SH 2, PLAN 13–C: REVISED LOCATION OF SONAR TRANSDUCER FROM FRAME 25 TO FRAME 23; RENAMED INBOARD BLOCK #3 TO #4 AND ADDED NEW INBOARD BLOCK #3; ADDED NOTE REGARDING OPTIONAL USE OF OUTBOARD BLOCKS 1–3 P/S. 4. SH 3, PLAN 20–A: REVISED LOCATION OF SONAR TRANSDUCER FROM FRAME 25 TO FRAME 23; RENAMED INBOARD BLOCK #3 TO #4 AND ADDED NEW INBOARD BLOCK #3; ADDED NOTE REGARDING OPTIONAL USE OF OUTBOARD BLOCKS 1–3 P/S; ADDED REFERENCE TO G.N. 15 TO KEEL BLOCK #1 AND OUTBOARD BLOCK #1. 5. SH 3, PLAN 20–C: REVISED LOCATION OF SONAR TRANSDUCER FROM FRAME 25 TO FRAME 23; RENAMED INBOARD BLOCK #3 TO #4 AND ADDED NEW INBOARD BLOCK #3; ADDED NOTE REGARDING OPTIONAL USE OF OUTBOARD BLOCKS 1–3 P/S. 6. SH 5, TABLES FOR SIDE BLOCK POSITION 1– 3: REVISED BEARING PRESSURES PER BLOCK TO SUIT KEEL BLOCK 15 DELETION; PROVIDED OPTION TO USE OUTBOARD BLOCKS 1 THRU 3 EXCEPT AS NOTED PER GN 15. RENAMED #3 IB TO #4 IB AND ADDED NEW IB BLOCK #3. 7. SH 6, TABLE FOR KEEL BLOCK 1–17: DELETED KEEL BLOCK 15 FROM TABLE TO CLEAR TRANSDUCER INTERFERENCE; ADDED REFERENCES TO GN 15 AND 16 TO KEEL BLOCK 1; REVISED BEARING PRESSURES PER BLOCK TO SUIT KEEL BLOCK DELETION. ITEMS 1 – 7 PER M282 REWORK #701–0002	7/13/04 AGE	7/16/04 RG
4		1. SH 2, PLAN 13–C: DELETED ALL OUTBOARD SIDE BLOCKS; RELOCATED INBOARD SIDE BLOCK #3 FROM 27 TO FRAME 30; REVISED FAIRING COMPOUND EXTENTS IWO PORT TRANSDUCER NEAR SIDE BLOCKS TO REFLECT AS–BUILT CONDITION. 2. SH 3, PLAN 20–C: DELETED ALL OUTBOARD SIDE BLOCKS EXCEPT FOR OUTBLOCK #1; RELOCATED INBOARD SIDE BLOCK #3 FROM 23 TO FRAME 27; REVISED FAIRING COMPOUND EXTENTS IWO PORT TRANSDUCER NEAR SIDE BLOCKS TO REFLECT AS–BUILT CONDITION. 3. SH 3, PLAN 20–A: DELETED ALL OUTBOARD SIDE BLOCKS EXCEPT FOR OUTBLOCK #1; ADDED INBOARD SIDE BLOCK #5 AT FRAME 19, 1587 OCL; REVISED FAIRING COMPOUND EXTENTS IWO PORT TRANSDUCER NEAR SIDE BLOCKS TO REFLECT AS–BUILT CONDITION. 4. SH 4, SECTION 20–A: DELETED OUTBOARD SIDE BLOCKS. 5. SH 4, SECTION 23–A: DELETED OUTBOARD SIDE BLOCKS. 6. SH 5, SIDE BLOCK POSITION NO. 1 TABLE: DELETED OUTBOARD BLOCKS 1 THRU 6; CHANGED LOCATION OF INBOARD BLOCK #3; REVISED BEARING PRESSURES TO SUIT NEW BLOCK ARRANGEMENT; CORRECTED BLOCK HEIGHTS; ADDED BLOCK MIDSPAN HEIGHT. 7. SH 5, SIDE BLOCK POSITION NO. 2 TABLE: DELETED OUTBOARD BLOCKS 2 THRU 6; CHANGED LOCATION OF ALL INBOARD BLOCKS; REVISED BEARING PRESSURES TO SUIT NEW BLOCK ARRANGEMENT; CORRECTED BLOCK HEIGHTS; ADDED BLOCK MIDSPAN HEIGHT. 8. SH 5, SIDE BLOCK POSITION NO. 3 TABLE: DELETED OUTBOARD BLOCKS 2 THRU 6; CHANGED LOCATION OF ALL INBOARD BLOCKS; REVISED BEARING PRESSURES TO SUIT NEW BLOCK ARRANGEMENT; CORRECTED BLOCK HEIGHTS; ADDED BLOCK MIDSPAN HEIGHT. 9. SH 6, TABLE FOR KEEL BLOCK: REVISED BEARING PRESSURES TO SUIT NEW BLOCK LAYOUTS. ITEMS 1 – 9 PER TRIAL CARD 1 B 001 OP 01	8/31/04 AE/RW	9/1/04 RG

DWG NO. M279–085–FA04 SH 1

RESERVATIONS

6	HULL OPENINGS/DISCHARGES & KEEL BLOCK OFFSETS TABLES
5	SIDE BLOCK OFFSETS & BEARING PRESSURES
4	BLOCKING ARRANGEMENT–SECTIONS
3	BLOCKING ARRANGEMENT–PLAN VIEWS
2	BLOCKING ARRANGEMENT–PLAN & ELEVATION
1	TITLE SHEET
SH	DESCRIPTION

DRAWING INDEX

13	DOCKING INSTRUCTIONS & ROUTINE WORK IN DRYDOCK	NAVSEA 59086–7G–STM–000
12	AN INTRODUCTION TO DRYDOCKING PRINCIPLES & TECHNIQUES	–
11	TRANSDUCER ARRANGEMENTS & INSTALLATION	M279–461–FE93
10	OUTBOARD PROFILE	M279–085–FA01
9	BILGE KEEL LAYOUT	M279–100–FH54
8	MOORING & TOWING FITTINGS–KEY PLAN & FDNS	M279–170–FH28
7	IMPRESSED CURRENT CATHODIC PROTECTION ARRG'T & DET	M279–624–FE70
6	BOSSING & STERN FRAME SCANTLINGS	M279–110–FH18
5	HULL TRANSOM SCANTLINGS, FR 82–TRANSOM	M279–100–FH05
4	HULL STERNBODY SCANTLINGS, FR 49–82	M279–110–FH04
3	HULL MIDBODY SCANTLINGS, FR 19–49	M279–110–FH03
2	HULL FOREBODY SCANTLINGS, FR 0–18	M279–100–FH02
1	GENERAL ARRANGEMENT	M279–085–FA02
NO.	TITLE	DRAWING NUMBER

REFERENCES

			4	4	4	4	4	4	REV
10	9	8	7	6	5	4	3	2	1	SHT

REVISION STATUS

DRL NUMBERS

AS BUILT

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VT Halter Marine, Inc.
Vision Technologies Systems

VESSEL: FRV40 CLASS 63m FISHERIES RESEARCH VESSEL

DRAWN BY: RW 6/11/03	ABS APPV		
CHECKED BY: AE/RG 7/4/03	USCG APPV		
APPROVED BY: AGE 7/9/03	OWNER APPV		
HULL NO: 1944	CAGE CODE: 3B213	SIZE: D	
ESTIMATE NO: 00–104	SCALE: NONE		

TITLE: DOCKING DRAWING

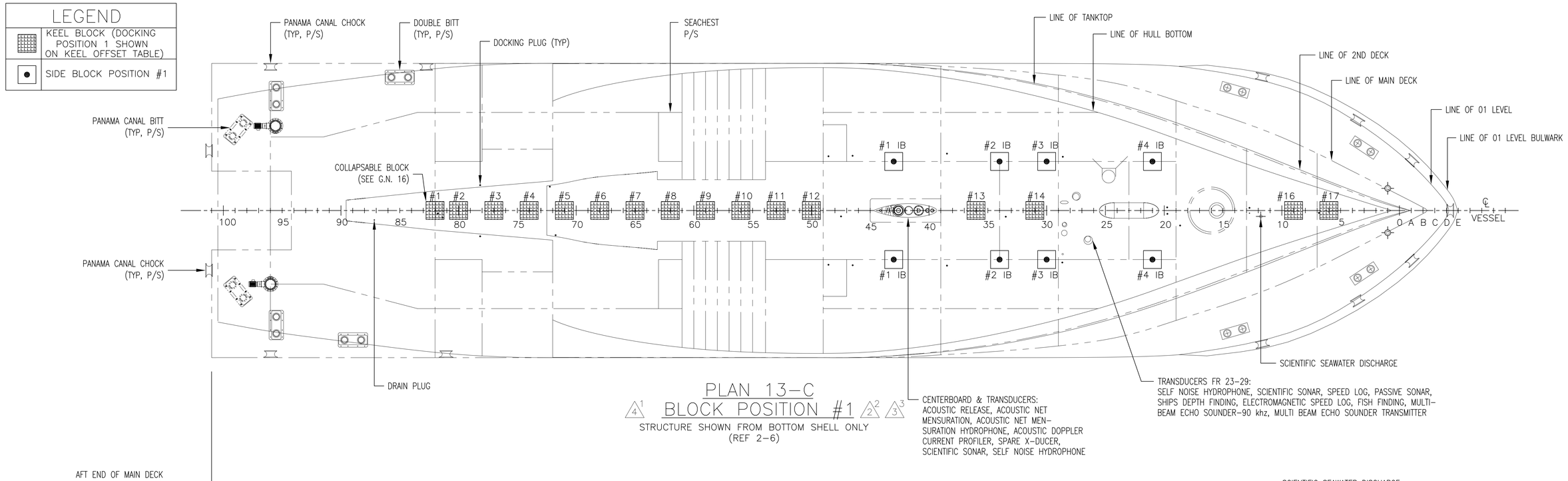
JOB NO.	ITEM	DELIVERABLE	SHEET	REV
M279	085	FA04	001	04

FILE R:\M279\FUNCTIONAL DESIGN\IN WORK\HULL.DWG | SHEET 1 OF 6

PLOT: 1=1

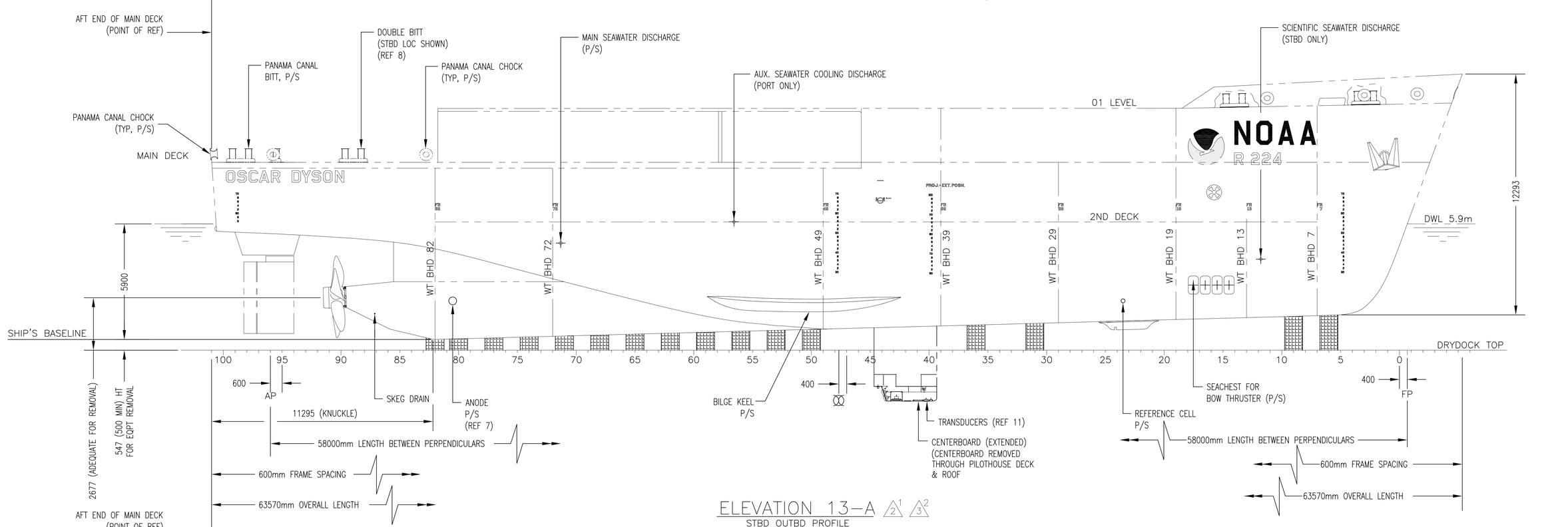
LEGEND

- KEEL BLOCK (DOCKING POSITION 1 SHOWN ON KEEL OFFSET TABLE)
- SIDE BLOCK POSITION #1


PANAMA CANAL CHOCK (TYP, P/S)
DOUBLE BITT (TYP, P/S)
DOCKING PLUG (TYP)
SEACHEST P/S
LINE OF TANKTOP
LINE OF HULL BOTTOM
LINE OF 2ND DECK
LINE OF MAIN DECK
LINE OF 01 LEVEL
LINE OF 01 LEVEL BULWARK
PANAMA CANAL BITT (TYP, P/S)
COLLAPSABLE BLOCK (SEE G.N. 16)
#1 IB
#2 IB
#3 IB
#4 IB
#1 #2 #3 #4 #5 #6 #7 #8 #9 #10 #11 #12 #13 #14 #16 #17
100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0
A B C D E
℄ VESSEL
PANAMA CANAL CHOCK (TYP, P/S)
DRAIN PLUG
SCIENTIFIC SEAWATER DISCHARGE
CENTERBOARD & TRANSDUCERS: ACOUSTIC RELEASE, ACOUSTIC NET MENSURATION, ACOUSTIC NET MEN-SURATION HYDROPHONE, ACOUSTIC DOPPLER CURRENT PROFILER, SPARE X-DUCER, SCIENTIFIC SONAR, SELF NOISE HYDROPHONE
TRANSDUCERS FR 23-29: SELF NOISE HYDROPHONE, SCIENTIFIC SONAR, SPEED LOG, PASSIVE SONAR, SHIPS DEPTH FINDING, ELECTROMAGNETIC SPEED LOG, FISH FINDING, MULTI-BEAM ECHO SOUNDER-90 khz, MULTI BEAM ECHO SOUNDER TRANSMITTER

PLAN 13-C
BLOCK POSITION #1 △4 1 △2 2 △3 3

STRUCTURE SHOWN FROM BOTTOM SHELL ONLY
(REF 2-6)



ELEVATION 13-A △2 1 △3 2

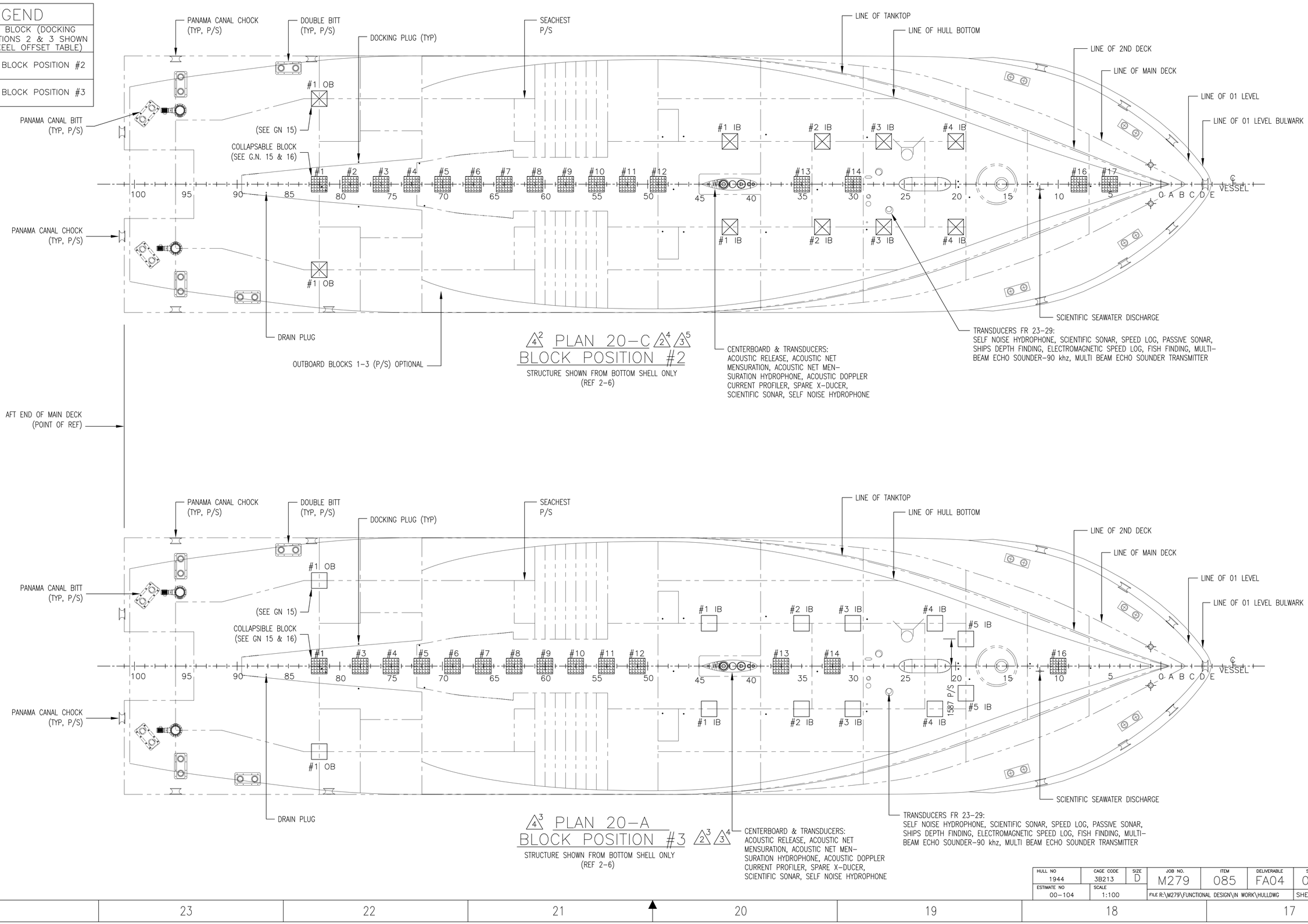
STBD OUTBD PROFILE
KEEL BLOCKS SHOWN
BULWARK & SUPERSTRUCTURE REMOVED FOR CLARITY
(REF 10)

DWG NO. M279-085-FA04 SH 2

HULL NO	CAGE CODE	SIZE	JOB NO.	ITEM	DELIVERABLE	SHEET	REV
1944	3B213	D	M279	085	FA04	002	04
ESTIMATE NO	SCALE		FILE R:\M279\FUNCTIONAL DESIGN\IN WORK\HULLDWG			SHEET 2 OF 6	
00-104	1:100						

PLOT: 1=100

LEGEND	
▦	KEEL BLOCK (DOCKING POSITIONS 2 & 3 SHOWN ON KEEL OFFSET TABLE)
☒	SIDE BLOCK POSITION #2
□	SIDE BLOCK POSITION #3



△4 2 PLAN 20-C △2 4 △3 5
BLOCK POSITION #2

STRUCTURE SHOWN FROM BOTTOM SHELL ONLY
(REF 2-6)

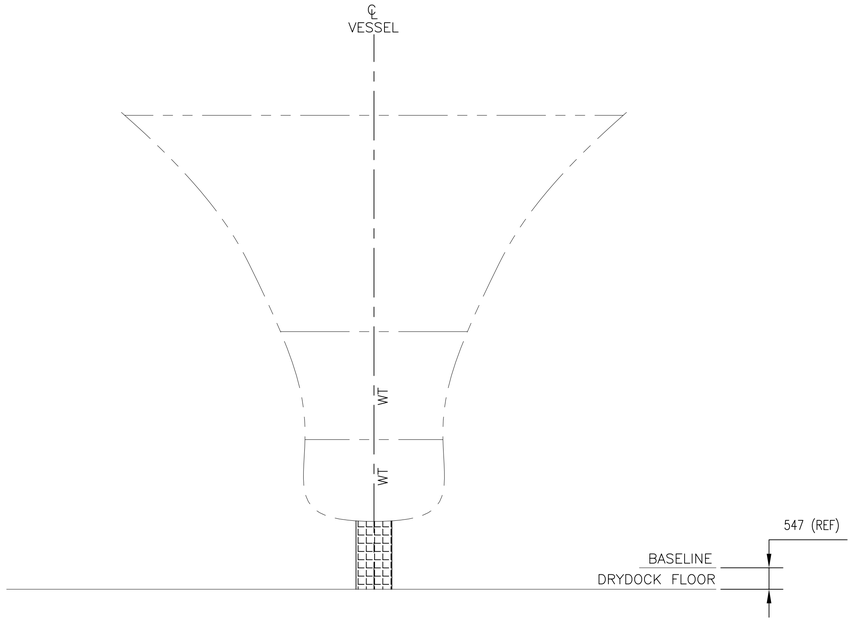
△4 3 PLAN 20-A
BLOCK POSITION #3 △2 3 △3 4

STRUCTURE SHOWN FROM BOTTOM SHELL ONLY
(REF 2-6)

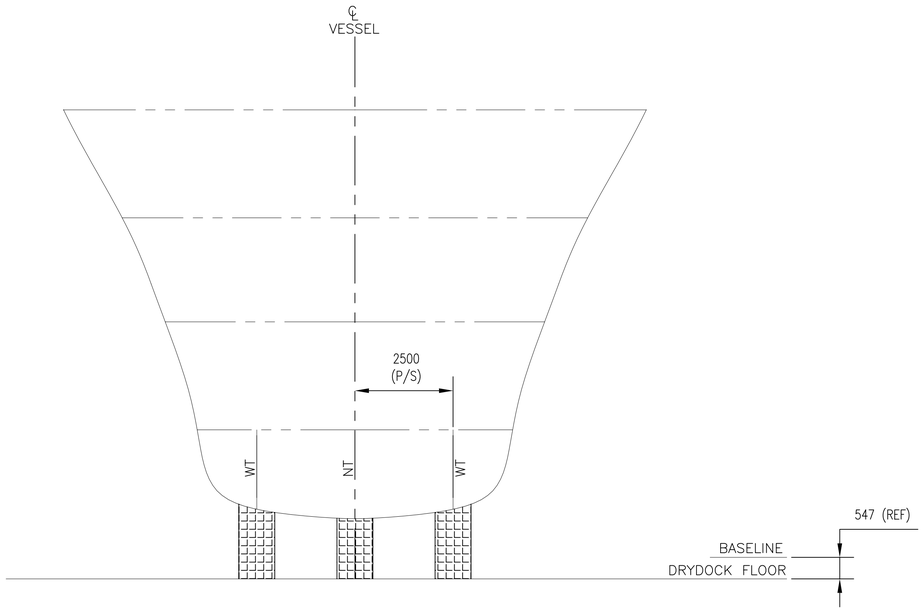
DWG NO. M279-085-FA04 SH 3

HULL NO	CAGE CODE	SIZE	JOB NO.	ITEM	DELIVERABLE	SHEET	REV
1944	3B213	D	M279	085	FA04	003	04
ESTIMATE NO	SCALE		FILE R:\M279\FUNCTIONAL DESIGN\IN WORK\HULLDWG			SHEET 3 OF 6	
00-104	1:100						

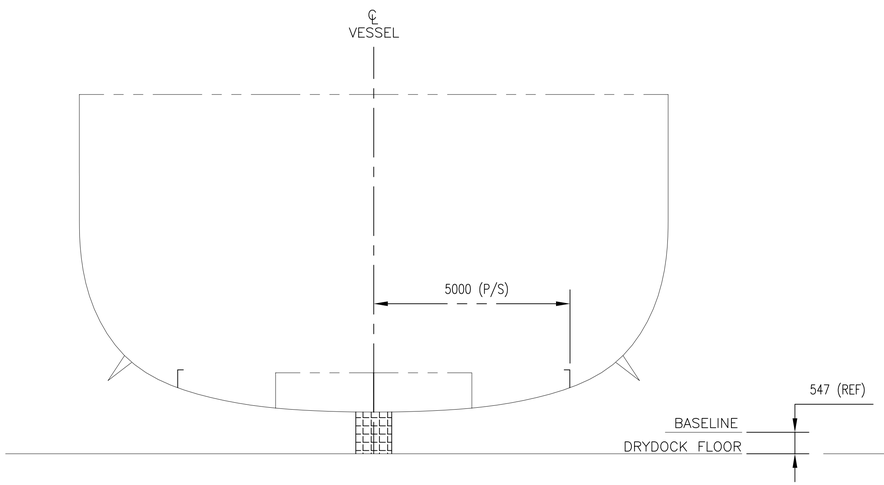
PLOT: 1=100



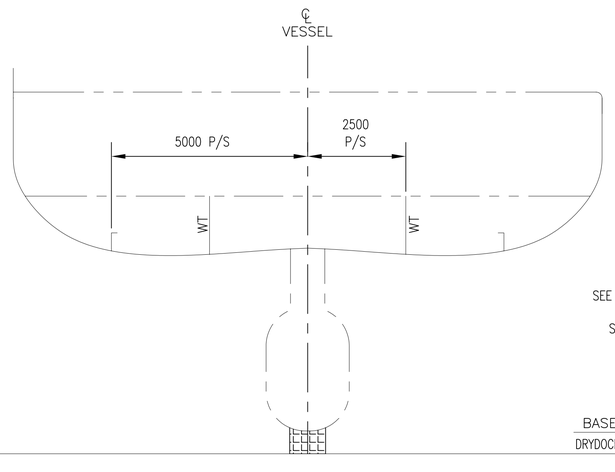
SECTION 23–C
FR 9 LKG FWD



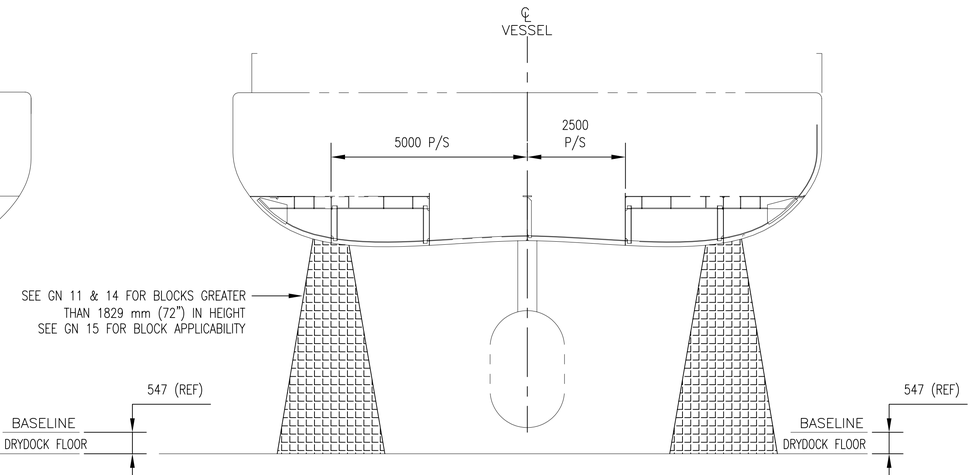
SECTION 20–C
FR 21 NT LKG FWD



SECTION 23–A
FR 50 LKG FWD
4/5



SECTION 20–A
FR 80 LKG FWD
4/4



SECTION 18–A
FR 83 LKG FWD

HULL NO	CAGE CODE	SIZE	JOB NO.	ITEM	DELIVERABLE	SHEET	REV
1944	3B213	D	M279	085	FA04	004	04
ESTIMATE NO	SCALE		FILE R:\M279\FUNCTIONAL DESIGN\IN WORK\HULLDWG			SHEET 4 OF 6	
00–104	1:75						

PLOT: 1=75

DWG NO. M279–085–FA04 SH 4

SIDE BLOCK POSITION NO. 1 △3[6] △4[6]

BLOCK NUMBER	HEIGHTS ABOVE HULL BASELINE (ADD HEIGHT OF KEEL BLOCK #1 TO OBTAIN TOTAL HT)						LOCATION (CTR OF BLOCK) FWD OF AFT REF POINT (mm)	BEARING PRESSURES PER BLOCK (KG/CM^2)
	FWD INBD EDGE	FWD MIDSPAN	FWD OUTBD EDGE	AFT INBD EDGE	AFT MIDSPAN	AFT OUTBD EDGE		
~~#1 OB~~	~~4988~~		~~5175~~	~~5176~~		~~5344~~	~~12000~~	~~OPTIONAL~~
~~#2 OB~~	~~4011~~		~~4301~~	~~4227~~		~~4498~~	~~16200~~	~~OPTIONAL~~
~~#3 OB~~	~~3023~~		~~3386~~	~~3237~~		~~3586~~	~~20400~~	~~OPTIONAL~~
~~#4 OB~~	~~1733~~		~~2128~~	~~1849~~		~~2251~~	~~27000~~	~~4.242~~
~~#5 OB~~	~~1587~~		~~1917~~	~~1578~~		~~1918~~	~~31200~~	~~13.305~~
~~#6 OB~~	~~1817~~		~~2329~~	~~1767~~		~~2229~~	~~37200~~	~~5.757~~
#1 IB	727	767	818	702	742	794	34800	14.377
#2 IB	887	931	990	859	901	958	40200	1.670
#3 IB	965	1015	1082	935	982	1046	42600	14.290
#4 IB	1164	1251	1394	1127	1202	1317	48000	16.738

SIDE BLOCK POSITION NO. 2 △3[6] △4[7]

BLOCK NUMBER	HEIGHTS ABOVE HULL BASELINE (ADD HEIGHT OF KEEL BLOCK #1 TO OBTAIN TOTAL HT)						LOCATION (CTR OF BLOCK) FWD OF AFT REF POINT (mm)	BEARING PRESSURES PER BLOCK (KG/CM^2)
	FWD INBD EDGE	FWD MIDSPAN	FWD OUTBD EDGE	AFT INBD EDGE	AFT MIDSPAN	AFT OUTBD EDGE		
△1[2] #1 OB	4566	4632	4740	4741	4800	4901	12610	SEE G.N. 15
~~#2 OB~~	~~3867~~		~~4170~~	~~4083~~		~~4367~~	~~16810~~	~~OPTIONAL~~
~~#3 OB~~	~~2881~~		~~3252~~	~~3094~~		~~3453~~	~~21010~~	~~OPTIONAL~~
~~#4 OB~~	~~1675~~		~~2062~~	~~1768~~		~~2166~~	~~27610~~	~~4.313~~
~~#5 OB~~	~~1599~~		~~1929~~	~~1583~~		~~1915~~	~~31810~~	~~12.292~~
△1[2] ~~#6 OB~~	~~1853~~		~~2403~~	~~1800~~		~~2294~~	~~37810~~	~~5.516~~
#1 IB	744	784	835	719	759	810	35400	14.255
#2 IB	907	952	1013	878	921	979	40800	1.054
#3 IB	1026	1082	1160	995	1047	1119	44400	6.321
#4 IB	1189	1288	1462	1151	1234	1366	48600	14.706

SIDE BLOCK POSITION NO. 3 △3[6] △4[8]

BLOCK NUMBER	HEIGHTS ABOVE HULL BASELINE (ADD HEIGHT OF KEEL BLOCK #1 TO OBTAIN TOTAL HT)						LOCATION (CTR OF BLOCK) FWD OF AFT REF POINT (mm)	BEARING PRESSURES PER BLOCK (KG/CM^2)
	FWD INBD EDGE	FWD MIDSPAN	FWD OUTBD EDGE	AFT INBD EDGE	AFT MIDSPAN	AFT OUTBD EDGE		
△1[3] #1 OB	4566	4632	4740	4741	4800	4901	11400	SEE G.N. 15
~~#2 OB~~	~~4155~~		~~4432~~	~~4371~~		~~4627~~	~~15591~~	~~OPTIONAL~~
~~#3 OB~~	~~3165~~		~~3519~~	~~3379~~		~~3719~~	~~19791~~	~~OPTIONAL~~
~~#4 OB~~	~~1806~~		~~2207~~	~~1944~~		~~2348~~	~~26391~~	~~4.165~~
~~#5 OB~~	~~1580~~		~~1916~~	~~1580~~		~~1931~~	~~30591~~	~~12.561~~
~~#6 OB~~	~~1783~~		~~2261~~	~~1738~~		~~2172~~	~~36591~~	~~5.888~~
#1 IB	711	750	802	686	727	778	34200	14.979
#2 IB	868	911	968	840	882	937	39600	2.489
#3 IB	965	1014	1081	935	982	1045	42600	14.728
#4 IB	1139	1217	1340	1103	1172	1274	47400	7.200
#5 IB	1091	1142	1215	1065	1112	1175	49200	14.173

HULL NO	CAGE CODE	SIZE	JOB NO.	ITEM	DELIVERABLE	SHEET	REV
1944	3B213	D	M279	085	FA04	005	04
ESTIMATE NO	SCALE		FILE R:\M279\FUNCTIONAL DESIGN\IN WORK\HULLDWG			SHEET 5 OF 6	
00-104	NONE						

DWG NO. M279-085-FA04 SH 5

PLOT: 1=1

TABLE FOR KEEL BLOCK NO. 1–17					△3 7 △4 9
BLK NO	DOCKING POSITION NO	AFT SIDE OF BLOCK FROM AFT REF PT (mm)	HEIGHT OF BLOCK (AFT SIDE (mm)	HEIGHT OF BLOCK (FWD SIDE (mm)	BEARING PRESSURE PER BLOCK (KG/CM^2)
1	1	10945	633	565	SEE GN 16
	2	10945	633	565	SEE GN 16
	3	10945	633	565	7.707 (SEE GN 16)
2	1	12145	570	594	21.277
	2	12755	586	610	33.898
	3		SMALL		
3	1	13945	618	642	11.860
	2	14555	634	658	4.831
	3	13336	601	625	19.748
4	1	15745	665	689	16.055
	2	16355	682	706	18.751
	3	15136	649	673	11.965
5	1	17545	714	738	14.497
	2	18155	730	754	14.498
	3	16936	697	721	14.228
6	1	19345	762	786	14.490
	2	19955	778	802	15.125
	3	18736	745	769	13.404
7	1	21145	810	834	14.030
	2	21755	826	850	14.407
	3	20536	793	817	13.369
8	1	22945	857	882	13.831
	2	23555	874	898	14.191
	3	22336	841	865	13.266
9	1	24745	905	929	13.039
	2	25355	922	946	13.313
	3	24136	889	913	12.650
10	1	26545	953	977	14.361
	2	27155	970	994	14.577
	3	25936	937	961	14.151
11	1	28345	1002	1026	7.819
	2	28955	1018	1042	7.938
	3	27736	985	1009	7.695
12	1	30145	1051	1075	23.393
	2	30755	1067	1091	23.501
	3	29536	1034	1058	23.657
13	1	38545	1275	1299	20.784
	2	39155	1292	1316	20.667
	3	37936	1259	1283	21.968
14	1	41545	1357	1381	7.102
	2	42155	1374	1398	10.261
	3	40936	1340	1364	1.269
15 △3 7	1		SMALL		△2 5
	2		SMALL		△2 5
	3		SMALL		
16	1	54745	1716	1740	29.170
	2	55355	1732	1756	26.783
	3	54136	1699	1724	12.479
17	1	56545	1765	1789	5.599
	2	57155	1785	1872	5.458
	3		SMALL		

LIST OF DOCKING PLUGS IN SHELL ●					
NO.	SIDE	FWD OR AFT	FRAME	FWD OF AFT REF POINT	DIST OFF CL SHIP
1	STBD	FWD	82	11519mm	150mm
2	STBD	FWD	82	11770mm	360mm
3	STBD	FWD	79	13693mm	1316mm
4	PORT	FWD	79	13693mm	1291mm
5	STBD	FWD	72	17535mm	1258mm
6	PORT	FWD	73	17242mm	1217mm
7	STBD	FWD	49	31467mm	2765mm
8	PORT	FWD	49	31467mm	2765mm
9	STBD	FWD	48	32109mm	300mm
10	PORT	FWD	47	32697mm	2790mm
11	STBD	FWD	47	32702mm	2790mm
12	PORT	FWD	39	37512mm	2900mm
13	STBD	FWD	39	37512mm	2810mm
14	STBD	FWD	34	40500mm	315mm
15	PORT	FWD	29	43422mm	2740mm
16	STBD	FWD	29	43397mm	2650mm
17	PORT	FWD	20	48748mm	160mm
18	STBD	FWD	20	48748mm	170mm
19	STBD	FWD	19	49387mm	765mm
20	PORT	FWD	13	52944mm	135mm
21	STBD	FWD	13	52944mm	135mm
22	STBD	FWD	7	56479mm	120mm

LIST OF DRAIN PLUGS IN SHELL ●					
NO	SIDE	FWD OR AFT	FRAME	FWD OF AFT REF POINT	DIST OFF CL SHIP
1	S	FWD	88	8300mm	480mm

LIST OF OPENINGS IN SHELL BELOW DWL									
NO.	SERVICE	SIZE OF PENETRATION	SIDE	FWD OR AFT	FRAME	FWD OF AFT REF POINT	DISTANCE OFF CL SHIP	HEIGHT ABV KEEL BOTTOM	REFERENCE
1	SCIENTIFIC SEAWATER DISCHARGE	150mm DIA	S	124 FWD	12	53526mm	2259mm	2966mm	
2	SCIENTIFIC SEAWATER DISCHARGE	150mm DIA	S	124 FWD	12	53526mm	300mm	0mm	
3	AUX. S.W. COOLING DISCHARGE	150mm DIA	P	250 FWD	57	26652mm	6431mm	5290mm	
4	MAIN SEAWATER DISCHARGE	170mm DIA	P/S	410 FWD	72	17812mm	6123mm	5662mm	
5	SEACHEST SUCTION	925x520	P/S	284 FWD	18	50086mm	2766mm	1735mm	
6	SEACHEST SUCTION	925x520	P/S	891 FWD	18	50693mm	2766mm	1719mm	
7	SEACHEST SUCTION	925x520	P/S	1498 FWD	18	51300mm	2964mm	1702mm	
8	SEACHEST SUCTION	925x520	P/S	2105 FWD	18	51907mm	2964mm	1686mm	

HULL NO	CAGE CODE	SIZE	JOB NO.	ITEM	DELIVERABLE	SHEET	REV
1944	3B213	D	M279	085	FA04	006	04
ESTIMATE NO	SCALE		FILE R:\M279\FUNCTIONAL DESIGN\IN WORK\HULLDWG			SHEET 6 OF 6	
00–104	NONE						

DWG NO. M279–085–FA04 SH 6

PLOT: 1=1